NAPCRG 52nd Annual Meeting — Abstracts of Completed Research 2024.

Submission Id: 6362

Title

Factor Analysis to create a shorter version of the Team Development Measurement Scale.

Priority 1 (Research Category)

Instrument development / psychometrics

Presenters

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Abstract

Context: Prior research suggests that effective team dynamics correlate with enhanced clinical outcomes, diminished medical errors, and mitigate burnout. Stock, et al. published the Team Development Measure (TDM) in 2013. It is a 31-item scale developed in primary care settings and has been demonstrated to be reliable and valid.

Objective: The aim of this study was to create a shorter version of the TDM and examine the reliability and validity of this tool.

Study Design and Analysis: An item fit analysis was conducted using Winsteps® Rasch Measurement Software, which included an item calibration and person reliability analyses, all of which was conducted by select members of the original study team. These analyses reduced the number of items from 31 to 20. We requested access to the de-identified dataset from the study team, and using the original dataset, we conducted psychometric testing to determine how dropping the 11 variables may have affected the original factor loadings, the domains, and validity of the 20-items measure.

Setting or Dataset: the dataset included responses from team members who represented rural and urban, and in- and out-patient health care settings across Oregon, Washington, and Alaska.

Population Studied: 1,194 individuals representing 120 different teams with team size ranging between 3-39 members.

Intervention/Instrument: We conducted an exploratory factor analysis using Principal Component Analysis with varimax rotation and Kaiser normalization. Analyses were conducted using IBM SPSS v29. The rotation converged in three iterations. A scree test was also performed as a parallel analysis. We report the factor loadings (domains measured), Eigenvalues, the percent of total variance, the scale

means and standard deviations, the number of items, and we used Cronbach's alpha to report reliability coefficients.

Results: Two components or domains loaded in this factor analysis. The first, which we named "Communication & Engage" had 10 items with an Eigenvalue of 10.9 and accounted for 54.5% of the variance. The mean score for this domain was 27.95 (SD=5.50), and the Cronbach's alpha was 0.92. The second domain "Shared Values" also had 10 items with an Eigenvalue of 1.10, with 5.5% variance. This domain had a mean score of 30.36 (SD=5.25), and the Cronbach's alpha was 0.93. The overall Cronbach's alpha with all items included was 0.96.

Conclisions: The TDM shortened version is less burdensome and valid for evaluating team development.